REMARKS/ARGUMENTS

Claims 1, 4-15 and 17-32 are active.

Claim 1 is amended to include a functional layer and that the functional layer is made of silver (see now cancelled Claim 16 and the discussion on pages 4-5 of the specification). Claim 1 is also amended to define that the multilayer has solar control or low-emissivity as described in the paragraph bridging pages 3-4 of the specification.

Claim 12 has been similarly amended to define that the functional layer is made of silver and the coatings have solar control or low-emissivity.

The remaining amendments are for clarity.

The specification is amended to capitalize the trade names indicated on page 2 as suggested in the Action.

No new matter is added.

The claims of this application are directed to a transparent substrate having an antireflection coating. A particular feature of this laminate is that at least one of those layers, in particular the high refractive index layer, comprises a mixed silicon zirconium nitride having a specified ratio of the Si and Zr. According to the specification on page 8 this selection of material provided advantages contrary to what was previously known about zirconium nitride as particularly absorbent when mixed with silicon nitride. The examples in the application use zirconium silicon nitride compared to other laminates having silicon nitride (examples 1 and 2 versus 3 and 4) in which the advantages of the zirconium silicon nitride are summarized on page 18, last 2 paragraphs which discusses the prevention of color in reflection from being greatly modified as the angle of incidence varies and can undergo heat treatment without impairing the optical properties. Further comparative data demonstrating improved performance is shown in examples 6 and 7 (page 25), example 8 for

solar protective performances (page 26) and the table on page 29 using aluminum zirconium nitride as comparative material.

In the Official Action, the Examiner has rejected Claims 1, 4-11, 28 and 30 as being obvious in view of WO 01/37006 (Joret) using the U.S. equivalent, US patent number 6,924,037 combined with Wolfe, US patent number 5,563,734. This rejection is no longer applicable as Claim 1 has been amended to include a functional layer made of silver (see previous claims 12 and 16), which as conceded in the rejection is not taught. Withdrawal of the rejection is requested.

The Wolfe patent is also cited by itself (see page 5 of the Official Action) to allege that Claims 12, 13, 16 and 20-22 would have been obvious. Wolfe does not describe the ratio of Si/Zr. Notwithstanding this deficiency, the rejection alleges that the ratio would have been obvious to optimize.

Applicants explained that what Wolfe describes in col. 3 does not actually give any indication that the parameter in question here (the percentage of zirconium within the high index layer is such that Si/Zr is 4.6 and 5--see Claim 1) is a result-effective variable. All that Wolfe describes is "The refractive index of the composite films will vary depending on the relative amounts of the different nitrides that comprise each film." This not an indication that the percent of Zr is a result-effective variable..

The examples in the application use zirconium silicon nitride compared to other laminates having silicon nitride (examples 1 and 2 versus 3 and 4) in which the advantages of the zirconium silicon nitride are summarized on page 18, last 2 paragraphs which discusses the prevention of color in reflection from being greatly modified as the angle of incidence varies and can undergo heat treatment without impairing the optical properties. Further comparative data demonstrating improved performance is shown in examples 6 and 7 (page

25), example 8 for solar protective performances (page 26) and the table on page 29 using aluminum zirconium nitride as comparative material. Also previously submitted is a Declaration presenting additional information as to the importance of the ratio between 4.6 and 5.

Applicants explained that the silicon zirconium nitride material provides improved performance as well as mechanical durability would not have been expected from what was known about the material prior to the present application.

There are two main reasons why the Examiner maintained the rejections: (A) because allegedly the cited documents provide an incentive to optimize the ratio of Si/Zn to improve optical properties (see page 12 where it is stated that the improvements were "entirely expected . . ." and (B) the data presented is not commensurate in scope with the claims.

With respect to point (B), Applicants believe that the evidence that has been provided demonstrates a trend from which one of ordinary skill in the art could conclude that the evidence is commensurate in scope with claimed subject matter that is alleged to be *prima facie* obvious. *In re Kollman* 595 F.2d 48, 201 USPQ 193 (Fed. Cir. 1979) and *Ex parte Winters*, 11 USPQ2d 1387, 1388 (Bd. App. & Inter. 1989) (In order to prove non-obviousness for a genus of compounds, only *representative* species need be shown.)

The claims have also been amended to define that the coating has low E and/or control solar with the layer based on Si/Zr with a specific ratio, Applicants have discovered certain advantages that are not suggested by the Wolfe patent nor the other citations in the Action.

As the Si3N4:Zr layer has a refractive index which is greater than the undoped Si3N4, the efficiency of solar control and/or low E when the substrate also includes at least one silver functional layer can vary based on the thickness of the silver layer and/or the number of silver layers. Efficiency ca be improved if the thickness of the silver layer increases, but on the

other hand this creates a greater reflection in the visible range. Typically in the art Si3N4 is used for producing an antireflective coating of the silver layer to try and compensate for these issues.

In this invention and as defined in claim 1, Applicants have found that when Si3N4:Zr is used rather than Si3N4 (see Examples presented in the specification, discussed above), Applicants observed improved optical properties, particularly with silver funcational layers. That Si3N4:Zr provided such a benefit is not suggested by Wolfe and the Applicants believe that this advantage is very surprising and unexpected in view of the common knowledge in the art.

Withdrawal of the rejection citing Wolfe is requested.

Combinations of certain claims are rejected combining Wolfe and Naudaud or Joret, Wolfe and Kimock (see pages 7-10 of the Official Action) for the purpose of finding limitations of those dependent claims. These references when combined with Wolfe or Joret do not remedy the core deficiencies of Wolfe and Joret as discussed above. That is, a Joret does not describe a functional layer made of silver nor does Wolfe and Joret suggest the coating has low E and/or control solar with the layer based on Si/Zr with a specific ratio, Applicants have discovered certain advantages.

Applicants have found that when Si3N4:Zr is used rather than Si3N4, a good antireflective coating with a thickness of silver which can be increased (low E stack and control solar stack has a better efficiency) or with the same thickness of the silver layer, Applicants observed improved optical properties. That Si3N4:Zr provided such a benefit is not suggested by the cited references when combined and the Applicants believe that this advantage is very surprising and unexpected in view of the common knowledge in the art.

In view of the above, it is requested that all of the rejections under 35 USC 103(a) be withdrawn.

A Notice of Allowance is also requested.

Respectfully submitted,

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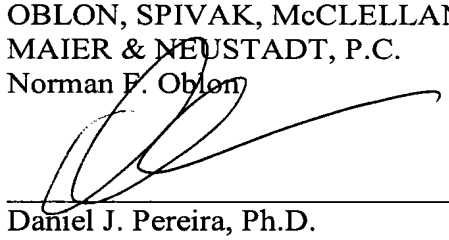

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